

Specifications guide

Iron ore

Latest update: April 2020

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DEFINITIONS OF THE TRADING LOCATIONS FOR WHICH PLATTS PUBLISHES INDEXES OR ASSESSMENTS

All the assessments listed here employ Platts Assessments Methodology, as published at https://www.spglobal.com/platts/plattscontent/_assets/_files/en/our-methodology/methodology-specifications/platts-assessments-methodology-guide.pdf.

These guides are designed to give Platts subscribers as much information as possible about a wide range of methodology and specification questions.

This guide is current at the time of publication. Platts may issue further updates and enhancements to this guide and will announce these to subscribers through its usual publications of record. Such updates will be included in the next version of this guide. Platts editorial staff and managers are available to provide guidance when assessment issues require clarification.

The following Iron Ore specifications guide contains the primary specifications and methodologies for Platts Iron Ore assessments throughout the world.

These are the timestamps used for Platts iron ore assessments. Data reported at or after these timestamps is not considered in the assessment process.

Asia: 5.30pm Singapore

Atlantic: 4.30pm London

FINES

Assessment	Code	Mavg	Wavg	Rolling monthly average	Type	Published	Page	Quality	DIMENSIONS	Quantity	Incoterms	Location	Timing	Payment	UOM
Seaborne Fines															
IODEX 62% Fe CFR China	IODBZ00	IODBZ03	IODBZ02	IODBZ04	Assessment	Daily	PMA1105	62% Fe, 8% moisture, 4% silica, 2.25% alumina, 0.09% phosphorus, 0.02% sulfur	Granular size of up to 10 mm for up to 90% of cargo	min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
TSI Iron Ore Fines 62% Fe CFR China	TS01021	TSMAU03		TSMBY03	Assessment	Daily		62% Fe, 8% moisture, 4% silica, 2.25% alumina, 0.09% phosphorus, 0.02% sulfur	Granular size of up to 10 mm for up to 90% of cargo	min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
IO Fines 65% Fe CFR China	IOPRM00	IOPRM03			Assessment	Daily	PMA1105	65% Fe, 8.5% moisture, 3.5% silica, 1% alumina, 0.075% phosphorus	Granular size of up to 10 mm for up to 90% of cargo	min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
IO Fines 65% Fe Differential to IODEX	IOALB00	IOALB03			Calculation	Daily		Differential of the code IOPRM00 to IODBZ00	Granular size of up to 10 mm for up to 90% of cargo	min 50,000 mt	CFR	Qingdao, China	NA	NA	\$/dmt
IO Fines 58% Fe Low Alumina CFR China	IONC580	IONC583			Assessment	Daily	PMA1105	58% Fe, 9% moisture, 10% loss on ignition, 5.5% silica, 1.5% alumina, 0.05% phosphorus, 0.02% sulfur	Granular size of up to 10 mm for up to 90% of cargo	min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
IO Fines 58% Fe Low Alumina Differential to IODEX	IOALA00	IOALA03			Calculation	Daily		Differential of the code IONC580 to IODBZ00	Granular size of up to 10 mm for up to 90% of cargo	min 50,000 mt	CFR	Qingdao, China	NA	NA	\$/dmt

FINES

Assessment	Code	Mavg	Wavg	Rolling monthly average	Type	Published	Page	Quality	DIMENSIONS	Quantity	Incoterms	Location	Timing	Payment	UOM
TSI Iron Ore Fines 58% Fe 1.5% Al China Imports CFR Qingdao Port	TS01047			TSMBX03	Assessment	Daily		58% Fe, 9% moisture, 10% loss on ignition, 5.5% silica, 1.5% alumina, 0.05% phosphorus, 0.02% sulfur	Granular size of up to 10 mm for up to 90% of cargo	min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
IO Fines 58% Fe CFR China	IODFE00	IODFE03			Assessment	Daily	PMA1105	58% Fe, 10% moisture, 5% silica, 4% alumina, 0.05% phosphorus	Granular size of up to 10 mm for up to 90% of cargo	min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
IO Fines 58% Fe Differential to IODEX	IOALC00	IOALC03			Calculation	Daily	PMA1105	Differential of the code IODFE00 to IODBZ00	Granular size of up to 10 mm for up to 90% of cargo	min 50,000 mt	CFR	Qingdao, China	NA	NA	\$/dmt
Seaborne Fines Brands															
Pilbara Blend Fines CFR Qingdao	IOPBQ00	IOPBQ03			Assessment	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Pilbara Blend Fines CFR Qingdao (Floating)	IOPBS00	IOPBS03			Calculation	Daily	PMA0140	as per typical specifications, 62% Fe-adjusted		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Pilbara Blend Fines CFR Qingdao (Fixed-Differential to IODEX)	IOPBT00	IOPBT03			Calculation	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Brazilian Blend Fines CFR Qingdao	IOBBA00	IOBBA03			Assessment	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Brazilian Blend Fines CFR Qingdao (Floating)	IOBBB00	IOBBB03			Calculation	Daily	PMA0140	as per typical specifications, 62% Fe-adjusted		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Brazilian Blend Fines CFR Qingdao (Fixed-Differential to IODEX)	IOBBC00	IOBBC03			Calculation	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Newman High Grade Fines CFR Qingdao	IONHA00	IONHA03			Assessment	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Newman High Grade Fines CFR Qingdao (Floating)	IONHB00	IONHB03			Calculation	Daily	PMA0140	as per typical specifications, 62% Fe-adjusted		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Newman High Grade Fines CFR Qingdao (Fixed-Differential to IODEX)	IONHC00	IONHC03			Calculation	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Mining Area C Fines CFR Qingdao	IOMAA00	IOMAA03			Assessment	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Mining Area C Fines CFR Qingdao (Floating)	IOMAB00	IOMAB03			Calculation	Daily	PMA0140	as per typical specifications, 62% Fe-adjusted		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Mining Area C Fines CFR Qingdao (Fixed-Differential to IODEX)	IOMAC00	IOMAC03			Calculation	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Jimblebar Fines CFR Qingdao	IOJBA00	IOJBA03			Assessment	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt

FINES

Assessment	Code	Mavg	Wavg	Rolling monthly average	Type	Published	Page	Quality	DIMENSIONS	Quantity	Incoterms	Location	Timing	Payment	UOM
Jimblebar Fines CFR Qingdao (Floating)	IOJBB00	IOJBB03			Calculation	Daily	PMA0140	as per typical specifications, 62% Fe-adjusted		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Jimblebar Fines CFR Qingdao (Fixed-Differential to IODEX)	IOJBC00	IOJBC03			Calculation	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	
57% Yandi Fines CFR Qingdao	IOYFA00	IOYFA03			Assessment	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
57% Yandi Fines CFR Qingdao (Floating)	IOYFB00	IOYFB03			Calculation	Daily	PMA0140	as per typical specifications, 62% Fe-adjusted		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
57% Yandi Fines CFR Qingdao (Fixed-Differential to IODEX)	IOYFC00	IOYFC03			Calculation	Daily	PMA0140	as per typical specifications, basis typical Fe		min 50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	

VIU DIFFERENTIALS

Assessment	Code	Mavg	Type	Published	Page	Quality	UOM
Iron Ore Fe Differential per 1% (60-63.5% Fe Fines)	IOMGD00	IOMGD03	Assessment	Daily	PMA1105	1% Fe within 60-63.5% range	
Iron Ore Fe Differential per 1% (55-60% Fe Fines)	TSIAD00	TSIAD03	Assessment	Daily	PMA1105	1% Fe within 55-60% range	\$/dmt
Iron Ore Alumina Differential per 1% with 1-2.5% (60-63.5% Fe Fines)	IOADF10		Assessment	Daily	PMA1105	1% alumina within 1-2.5% range for fines with 60-63.5% Fe	\$/dmt
Iron Ore Alumina Differential per 1% with 2.5-4% (60-63.5% Fe Fines)	IOALE00	IOALE03	Assessment	Daily	PMA1105	1% alumina within 2.5-4% range for fines with 60-63.5% Fe	\$/dmt
Iron Ore Alumina Differential per 1% with <5% (55-60% Fe Fines)	TSIAF00	TSIAF03	Assessment	Daily	PMA1105	1% alumina below 5% for fines with 55-60% Fe	\$/dmt
Iron Ore Silica Differential per 1% with 3-4.5% (60-63.5% Fe Fines)	IOALF00	IOALF03	Assessment	Daily	PMA1105	1% silica within 3-4.5% range for fines with 60-63.5% Fe	\$/dmt
Iron Ore Silica Differential per 1% with 4.5-6.5% (60-63.5% Fe Fines)	IOPPS10		Assessment	Daily	PMA1105	1% silica within 4.5-6.5% range for fines with 60-63.5% Fe	\$/dmt
Iron Ore Silica Differential per 1% with 6.5-9% (60-63.5% Fe Fines)	IOPPS20		Assessment	Daily	PMA1105	1% silica within 6.5-9% range for fines with 60-63.5% Fe	\$/dmt
Iron Ore Silica Differential per 1% (55-60% Fe Fines)	TSIAI00	TSIAI03	Assessment	Daily	PMA1105	1% silica for fines with 55-60% Fe	\$/dmt
Iron Ore Phosphorus Differential per 0.01% with 0.09-0.12% (60-63.5% Fe Fines)	IOPPQ00		Calculation	Daily	PMA1105	0.01% phosphorus within 0.09-0.12% range for fines with 60-63.5% Fe	\$/dmt
Iron Ore Phosphorus Differential per 0.01% with 0.09-0.10% (60-63.5% Fe Fines)	IOPPR00		Assessment	Daily	PMA1105	0.01% phosphorus within 0.09-0.10% range for fines with 60-63.5% Fe	\$/dmt
Iron Ore Phosphorus Differential per 0.01% with 0.10-0.11% (60-63.5% Fe Fines)	IOPPT00		Assessment	Daily	PMA1105	0.01% phosphorus within 0.10-0.11% range for fines with 60-63.5% Fe	\$/dmt
Iron Ore Phosphorus Differential per 0.01% with 0.11-0.12% (60-63.5% Fe Fines)	IOPPU00		Assessment	Daily	PMA1105	0.01% phosphorus within 0.11-0.12% range for fines with 60-63.5% Fe	\$/dmt
Iron Ore Phosphorus Differential per 0.01% with 0.12-0.15% (60-63.5% Fe Fines)	IOPPV00		Assessment	Daily	PMA1105	0.01% phosphorus within 0.12-0.15% range for fines with 60-63.5% Fe	\$/dmt

Fines

Standard trade and delivery terms for seaborne assessments

Iron ore brands are typically sold against the standard spot contract terms of the mining company producing and marketing the brand or against base contracts that do not differ materially from the miner's spot contract terms. Platts may publish bids, offers and trades that carry different terms and conditions, but may normalize these when considered in the final assessment.

Platts observes that trading against a Letter of Indemnity (LOI) is a typical market practice in iron ore. Platts may not reflect cargoes offered against original bill of lading (OBL) discharge.

The typical document presentation period does not exceed 35 days after the shipment date. Bids, offers and trades with document presentation period longer than 35 days may be normalized when considered in the assessment. Participants in the MOC process should clearly state in offers if the presentation period is longer.

Platts tracks terms used in iron ore trade and may update this list according to market developments.

Platts assesses CFR Qingdao, China, cargo deliveries 14-56 days forward from the date of publication, and does not include one-off or distressed trades where either the buyer or seller has left it too late to transact within acceptable lead times that can typically be met by counterparties in the normal course of business. In order to consider FOB indications, Platts adds the average estimated sailing time from loadport to Qingdao, China, to the loading laycan to estimate arrival dates.

Any transaction that is negotiated as part of a framework of longer-term contractual arrangements (term deals) will be excluded from the assessment process.

Normalization

In addition to typical normalization techniques, described

in the Platts Assessments Methodology, the iron ore quality normalization involves adjusting the value to reflect differences in chemical, physical and metallurgical properties.

In normalizing for chemical quality, the most important factors Platts reflects are iron, alumina, silica and phosphorus. Platts normalizes for differences in iron content by adjusting on an iron unit basis, when the alumina and silica contents of an observed product approximate those underlying the Platts assessments. For example, a cargo with specifications of 61% Fe, 1.9% alumina and 2.7% silica will be normalized by dividing its price by 61 and then multiplying by 62 for normalization to IODEX specifications, in accordance with industry practice. Platts surveys the market and applies its value-in-use assessments to adjust market information for alumina, silica and phosphorus.

In addition to published penalties and premia for silica, alumina and phosphorus in its normalization process, Platts may consider other quality and non-quality parameters which have an impact on the value.

Platts assess to the middle of the 14-56 days delivery period by normalizing the delivery timing difference.

Seaborne Fines

IODEX & TSI 62% Fe fines CFR China

Platts considers the following iron ore medium grade fines brands for these assessments: Pilbara Blend Fines, Newman High Grade Fines, Brazilian Blend Fines, Mining Area C Fines and Jimblebar Fines, according to the typical specifications of these brands, unless notified of specific cargo quality. Platts continuously reviews whether brands cease to be or become sufficiently fungible to be considered in the IODEX & TSI 62% Fe assessment processes.

Ores of grades below 60% Fe and above 63.5% Fe may not be used directly in the formation of the 62% Fe IODEX due to a lack of linearity in the price escalation/de-escalation on a per Fe basis outside this range. Platts considers full & part cargoes

of the above medium grade fines brands, and also combined cargoes comprising of two different fines grades. They may however be referred to as an indicator of general price direction.

TSI 62% Fe is published at parity with IODEX.

58% and 65% Fe fines CFR China

Iron ore fines with below 60% Fe may be considered in the standard and low-alumina 58% Fe assessments. Iron ore fines with above 63.5% Fe may be considered in the 65% assessment.

In addition to the outright prices, Platts publishes differentials of 65%, 58% and 58% low-alumina fines to IODEX.

TSI 58% Fe 1.5% Al is published at parity with Platts 58% low-alumina IO fines.

Seaborne Fines Brands

Platts assesses Pilbara Blend Fines, Newman High Grade Fines, Brazilian Blend Fines, Mining Area C Fines, Jimblebar Fines and 57% Fe Yandi fines brands on a fixed and floating price basis daily. In addition, Platts publishes daily differentials of these brands to IODEX.

Platts assesses fixed price brands against their typical specifications, using information collected throughout the day from active market participants across the supply chain. The floating brand assessments are calculated as a difference between the fixed price brand assessments, converted into basis 62% Fe, and the front-month paper derivative (TSIPM01).

VIU Differentials

Value-in-use (VIU) differentials are assessments which help determine penalties and premia for iron (Fe) content and content of various impurities, such as alumina, silica and phosphorus in iron ore fines.

Platts publishes VIUs for two different ranges of iron ores: medium range with the Fe content of 60-63.5% and for lower grade of 55-60%. In cases where an iron ore brand temporarily falls outside of the defined Fe range due to a short-term deterioration or improvement in their Fe content, that brand may still be considered, provided the phenomenon is indeed temporary. For medium-range ores the penalties for impurities are not linear and Platts publishes assessments for specific bands. The values within each band are considered to be linear.

The values are determined by comparing spot transactions of fines within each of these ranges respectively.

Values of impurities are also determined from the data gathered from industry sources buying or selling cargoes with specific Fe content with differing alumina and silica impurities.

1% Fe Differential: Platts publishes two assessments of 1% Fe: for ores with a 60-63.5% Fe content and for ores with a 55-60% Fe content.

Per 1% Alumina Differential: Platts publishes three assessments of 1% Al: two bands for ores with a 60-63.5% Fe content, and one for ores with a 55-60% Fe content.

Per 1% Silica Differential: Platts publishes four assessments of 1% Si: three bands for ores with a 60-63.5% Fe content, and one for ores with a 55-60% Fe content.

Per 0.01% Phosphorus Differential: Platts publishes four bands of 0.01% P for ores with a 60-63.5% Fe content and one calculated average of these assessments.

LUMP AND PELLET

Assessment	Code	Mavg	Rolling monthly average	Type	Published	Page	Quality	DIMENSIONS	Quantity	Incoterms	Location	Timing	Payment	UOM
Seaborne Lump														
IO Spot Lump Premium 62.5% CFR China	IOCLP00	IOCLP03	IOCLZ03	Assessment	Daily	PMA1117	62.5% Fe, 4% moisture, 3.5% silica, 1.5% alumina, 0.075% phosphorus, 0.02% sulfur	Sizing of max 15% <6.3 mm and max 15% min >31.5 mm	50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmtu
Iron Ore lump Outright Price CRF China	IOCLS00	IOCLS03	IOCLS33	Assessment	Daily	PMA1117	62% Fe, 4% moisture, 3.5% silica, 1.5% alumina, 0.075% phosphorus, 0.02% sulfur	Sizing of max 15% <6.3 mm and max 15% min >31.5 mm	50,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
CFR China Pellet														
IO Spot Blast Furnace Pellet Premium 65% CFR China	IOBFC04	IOBFC03		Assessment	Wednesday	PMA1161	65% Fe blast furnace pellet, CFR China: 0.35% alumina, 5% silica, 0.02% phosphorus, 0.003% sulfur, 250 Cold Crushing Strength (CCS)	Maximum sizing of 2.5% under 5 mm	min 35,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
IO Spot Blast Furnace Pellet Premium 64% CFR China	IOQSQ04	IOQSQ03		Assessment	Wednesday	PMA1161	64% Fe blast furnace pellet, CFR China: 2.70% alumina, 3.5% silica, 0.08% phosphorus, 0.008% sulfur, 230 Cold Crushing Strength (CCS)	Maximum sizing of 5.0% under 5 mm	min 35,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
IO Spot Blast Furnace Pellet 64% CFR China	IOQQR04	IOQQR03		Assessment	Wednesday	PMA1161	64% Fe blast furnace pellet, CFR China: 2.70% alumina, 3.5% silica, 0.08% phosphorus, 0.008% sulfur, 230 Cold Crushing Strength (CCS)	Maximum sizing of 5.0% under 5 mm	min 35,000 mt	CFR	Qingdao, China	14-56 days forward	L/C at sight	\$/dmt
Atlantic Pellet														
Atlantic Basin Iron Ore Pellets Estimated Monthly Contract Price Brazil Export FOB	SB01095			Calculation	Monthly	PMA1160	65% Fe blast furnace pellet: Silica 3%; Alumina 0.5%; CCS 275; LTD +6.3 mm, 80; Sizing over 9 mm is >94%	Sizing below 6.3 mm <2.5%	not specified	FOB	Brazil	Current month	not specified	US cents / dmtu
Atlantic Iron ore blast furnace pellet contract price premium	IOBFP00			Assessment	Monthly	PMA1160	65% Fe blast furnace pellet: Silica 3%; Alumina 0.5%; CCS 275; LTD +6.3 mm, 80; Sizing over 9 mm is >94%	Sizing below 6.3 mm <2.5%	not specified	FOB	Brazil	Current month	not specified	\$/dmt
Iron Ore 67.5% Fe DR Pellet Premium (62% Fe IODEX fines basis)	IODRP00			Assessment	Monthly	PMA1160	67.5% Fe DR pellet, 1.5% Silica, 300 CCS	Sizing over 9 mm >94%.	not specified	NA	NA	Current month	not specified	\$/dmt
Iron Ore 67.5% Fe DR Pellet Premium (65% Fe fines basis)	IODBP00			Assessment	Monthly	PMA1160	67.5% Fe DR pellet, 1.5% Silica, 300 CCS	Sizing over 9 mm >94%.	not specified	NA	NA	Current month	not specified	\$/dmt
Iron Ore 67.5% Fe DR Pellet	IODBR00			Calculation	Monthly	PMA1160	67.5% Fe DR pellet, 1.5% Silica, 300 CCS	Sizing over 9 mm >94%.	not specified	FOB	Brazil	Current month	not specified	\$/dmt
Iron Ore 67.5% Fe DR Pellet	IODBU00			Calculation	Monthly	PMA1160	67.5% Fe DR pellet, 1.5% Silica, 300 CCS	Sizing over 9 mm >94%.	not specified	FOB	Brazil	Current month	not specified	US cents / dmtu

Lump and pellet

Lump

Platts assesses iron ore lump as a premium over a corresponding forward strip of 62% iron ore fines, which is a proxy value calculated by using 62% iron ore fines derivatives, covering the 42 days that correspond to the forward delivery dates reflected in Platts iron ore assessments (14-56 day delivery window). Market information for lump premium indications over a base month is normalized to a 62% iron ore fines strip basis, after adjusting the timing. This is to ensure all lump premium indications are compared against the same base.

Platts accounts for lump physical market structure in the normalization of the lump premium. In the absence of physical market structure information, Platts may consider lump derivative market structure and fines market structure. Platts may consider index-linked price points in the lump premium assessments by measuring these alongside observable outright prices.

Platts also assesses iron ore lump as outright spot prices on a daily basis in US dollars per dry metric ton (\$/dmt), reflecting the value of lump on CFR Qingdao basis. The specifications are aligned with the existing specifications for the lump premium assessment. The outright price is assessed by taking into account the iron ore fines strip and the lump premium. Besides, market information obtained on a flat price basis could be considered in the outright price assessments after normalization.

Metallurgical properties have not been specified in line with

current spot trading convention, as tests are not typically conducted on each cargo, whether at load or discharge port. Market participants evaluate the premium each brand commands, incorporating chemical, physical and metallurgical properties, in large part based on prior knowledge of these properties and experience using the products.

Pellet

CFR China

Platts publishes assessments for 65% and 64% Fe blast furnace iron ore pellets, expressed as premiums over Platts 62%-Fe Iron Ore Index after iron content adjustment. Market information obtained on an outright price basis can be converted to a premium on a dmt basis using the Mid-Window Month derivative. Platts also publishes an outright price for the 64% Fe pellet.

Metallurgical properties have not been specified in line with current spot trading convention, as tests are not typically conducted on each cargo, whether at load or discharge port. Market participants evaluate the premium each brand commands, incorporating chemical, physical and metallurgical properties, in large part based on prior knowledge of these properties and experience using the products.

Atlantic Market

Platts publishes assessments for iron ore pellets in the Atlantic Basin on an FOB Brazil basis. The assessments represent provisional contract settlement for iron ore blast furnace pellets sold in term contracts to steel mills, primarily in Europe. The values are published on the first business day of the month following London holiday calendar both as an outright price

and as premium. The premium, published in \$/dmt, reflects an additional charge over the quality-adjusted iron ore fines. The outright price, published in US cents/dmtu, is calculated based on the monthly average netback to Brazil (IONBB03) of the previous month. The quality is adjusted to 65% Fe as a basis for pellet pricing by adding three times 1% Fe differential monthly average (IOMGD03) for the previous month. The outright price on a dmtu basis is calculated by dividing the sum value by 65.

Direct Reduction Pellet

Platts publishes assessments for a high quality 67.5% Fe direct reduction iron ore pellets, expressed as premiums over Platts 62%-Fe IODEX and a 65% Fe fines assessment after iron content adjustment. The assessments reflect the “premium” used in formulating a provisional contract settlement price for DR pellets, sold in term contracts to steel mills, primarily in Middle East, North Africa, and in the Americas. The published premiums are net of any further quality and iron content adjustments.

Platts also publishes an outright price for the DR grade pellet on an FOB Brazil basis in \$/dmt, which is calculated as a sum of Iron Ore 67.5% Fe DR Pellet Premium (IODBP00), and the monthly average of 65%-Fe fines netback to Brazil (IOFBN03) of the previous month, with the base adjusted up to 67.5% Fe. The outright DR pellet FOB Brazil price is also published in US cents/dmtu, which is calculated by dividing IODBR00 by 67.5 units of Fe.

All DR grade pellet assessments are published on the first business day of the month following the London holiday calendar.

DOMESTIC CHINESE

Assessment	Code	Mavg	Rolling monthly average	Type	Published	Page	Quality	DIMENSIONS	Quantity	Incoterms	Location	Timing	Payment	UOM
Port Stock Indices														
IOPEX 62% Fe FOT East China	IOPBN00	IOPBN03	IOPB000	Assessment	Daily	PMA0120	62% Fe, 8% moisture, 4% silica, 2.25% alumina, 0.09% phosphorus, 0.02% sulfur	Granular size of up to 10 mm for up to 90% of lot	min 5,000 mt	FOT	Rizhao & Qingdao, China		TT/CAD	Yuan/wmt
IOPEX 62% Fe FOT East China (import parity USD-equivalent)	IOPDC00	IOPCC03		Calculation	Daily	PMA0120	62% Fe, 8% moisture, 4% silica, 2.25% alumina, 0.09% phosphorus, 0.02% sulfur		min 5,000 mt	FOT	East China		TT/CAD	\$/dmt
Pilbara Blend Fines FOT East China	IOPBG00	IOPBG03		Assessment	Daily	PMA0120	(No standard quality - use the typical quality of seaborne)		min 5,000 mt	FOT	Rizhao & Qingdao, China		TT/CAD	Yuan/wmt
Newman High Grade Fines FOT East China	IOPBH00	IOPBH03		Assessment	Daily	PMA0120	(No standard quality - use the typical quality of seaborne)		min 5,000 mt	FOT	Rizhao & Qingdao, China		TT/CAD	Yuan/wmt
IOPEX 62% Fe FOT North China	IOPBL00	IOPBL03	IOPBM00	Assessment	Daily	PMA0120	62% Fe, 8% moisture, 4% silica, 2.25% alumina, 0.09% phosphorus, 0.02% sulfur	Granular size of up to 10 mm for up to 90% of lot	min 5,000 mt	FOT	Caofeidian & Jingtang, China		TT/CAD	Yuan/wmt
IOPEX 62% Fe FOT North China (import parity USD-equivalent)	IOPCC00	IOPDC03		Calculation	Daily	PMA0120	62% Fe, 8% moisture, 4% silica, 2.25% alumina, 0.09% phosphorus, 0.02% sulfur		min 5,000 mt	FOT	North China		TT/CAD	\$/dmt
Pilbara Blend Fines FOT North China	IOPBE00	IOPBE03		Assessment	Daily	PMA0120	(No standard quality - use the typical quality of seaborne)		min 5,000 mt	FOT	Caofeidian & Jingtang, China		TT/CAD	Yuan/wmt
Newman High Grade Fines FOT North China	IOPBF00	IOPBF03		Assessment	Daily	PMA0120	(No standard quality - use the typical quality of seaborne)		min 5,000 mt	FOT	Caofeidian & Jingtang, China		TT/CAD	Yuan/wmt
IOPEX 62% Fe FOT East China	IOPEC00	IOPEC03	IOPEM03	Assessment	Daily	PMA1119			min 5,000 mt	FOT	Rizhao & Qingdao, China		TT/CAD	Yuan/dmt
61.5% Pilbara Blend Fines FOT East China	IOPBC00	IOPBC03		Calculation	Daily	PMA1119	(No standard quality - use the typical quality of seaborne)		min 5,000 mt	FOT	Rizhao & Qingdao, China		TT/CAD	Yuan/dmt
Newman High Grade Fines FOT East China	IOPBD00	IOPBD03		Calculation	Daily	PMA1119	(No standard quality - use the typical quality of seaborne)		min 5,000 mt	FOT	Rizhao & Qingdao, China		TT/CAD	Yuan/dmt
IOPEX 62% Fe FOT North China	IOPNC00	IOPNC03	IOPNM03	Assessment	Daily	PMA1119			min 5,000 mt	FOT	Caofeidian & Jingtang, China		TT/CAD	Yuan/dmt
61.5% Pilbara Blend Fines FOT North China	IOPBA00	IOPBA03		Calculation	Daily	PMA1119	(No standard quality - use the typical quality of seaborne)		min 5,000 mt	FOT	Caofeidian & Jingtang, China		TT/CAD	Yuan/dmt
Newman High Grade Fines FOT North China	IOPBB00	IOPBB03		Calculation	Daily	PMA1119	(No standard quality - use the typical quality of seaborne)		min 5,000 mt	FOT	Caofeidian & Jingtang, China		TT/CAD	Yuan/dmt
Domestic Concentrate														
IO Concentrate 66% Fe DDP Tangshan VAT-inclusive Wkly	SB01159	SBMAJ03		Assessment	Friday		66% Fe, 8% moisture, 5% silica, 0.75% alumina, max 0.03% phosphorus, max 0.05% sulfur	Granular size of more than 0.074 mm for at least 70% of cargo	min 1,000 mt	DDP	Tangshan, Hebei, China	Delivery within 2 weeks	Cash at sight	Yuan/dmt

Domestic Chinese

Port Stock Indices (IOPEX)

Platts iron ore port stocks indices, or IOPEX, include assessments on FOT basis in East and North China. For each region, the assessments reflect medium grade iron ore fines, as well as the brand assessments of Pilbara Blend Fines and Newman Fines in Yuan/wmt. These assessments reflect trade activity in Caofeidian & Jingtang in Northern China and Rizhao & Qingdao in Eastern China, with the most competitive values in either port pair forming the basis of the assessment.

Platts also publishes import parity port stocks assessments in both regions in \$/dmt, accounting for port charges and VAT.

Domestic Chinese Concentrate

Platts publishes a weekly assessment for domestic Chinese 66% Fe concentrate delivered duty paid Tangshan region. The assessment is inclusive of VAT.

DERIVATIVES

Assessment	Code	Type	Published	Page	Quality	Quantity	Incoterms	Location	Timing	Payment	UOM
TSI Iron Ore 62% Fe Derivative Current Month (Mo0)	TSIPM00	Assessment	Daily	PMA1113	Basis TSI Iron Ore Fines 62% Fe CFR China	Not specified	CFR	Qingdao, China	Current month	Not specified	\$/dmt
TSI Iron Ore 62% Fe Derivative Mo01	TSIPM01	Assessment	Daily	PMA1113	Basis TSI Iron Ore Fines 62% Fe CFR China	Not specified	CFR	Qingdao, China	First month after current month	Not specified	\$/dmt
TSI Iron Ore 62% Fe Derivative Mo02	TSIPM02	Assessment	Daily	PMA1113	Basis TSI Iron Ore Fines 62% Fe CFR China	Not specified	CFR	Qingdao, China	Second month after current month	Not specified	\$/dmt
TSI Iron Ore 62% Fe Derivative Mo03	TSIPM03	Assessment	Daily	PMA1113	Basis TSI Iron Ore Fines 62% Fe CFR China	Not specified	CFR	Qingdao, China	Third month after current month	Not specified	\$/dmt
TSI Iron Ore 62% Fe Derivative Qr01	TSIPQ01	Assessment	Daily	PMA1113	Basis TSI Iron Ore Fines 62% Fe CFR China	Not specified	CFR	Qingdao, China	First quarter after current quarter	Not specified	\$/dmt
TSI Iron Ore 62% Fe Derivative Qr02	TSIPQ02	Assessment	Daily	PMA1113	Basis TSI Iron Ore Fines 62% Fe CFR China	Not specified	CFR	Qingdao, China	Second quarter after current quarter	Not specified	\$/dmt
TSI Iron Ore 62% Fe Derivative Qr03	TSIPQ03	Assessment	Daily	PMA1113	Basis TSI Iron Ore Fines 62% Fe CFR China	Not specified	CFR	Qingdao, China	Third quarter after current quarter	Not specified	\$/dmt
TSI Iron Ore 62% Fe Derivative Yr01	TSIPY01	Assessment	Daily	PMA1113	Basis TSI Iron Ore Fines 62% Fe CFR China	Not specified	CFR	Qingdao, China	First year after current year	Not specified	\$/dmt
Iron Ore Lump Premium Derivative Current Month (Mo0)	AAQUA00	Assessment	Daily	PMA1113	Basis Spot Lump Premium 62.5% CFR China	Not specified	CFR	Qingdao, China	Current month	Not specified	\$/dmtu
Iron Ore Lump Premium Derivative Mo01	AAQUA01	Assessment	Daily	PMA1113	Basis Spot Lump Premium 62.5% CFR China	Not specified	CFR	Qingdao, China	First month after current month	Not specified	\$/dmtu
Iron Ore Lump Premium Derivative Mo02	AAQUA02	Assessment	Daily	PMA1113	Basis Spot Lump Premium 62.5% CFR China	Not specified	CFR	Qingdao, China	Second month after current month	Not specified	\$/dmtu
Iron Ore Lump Premium Derivative Mo03	AAQUA03	Assessment	Daily	PMA1113	Basis Spot Lump Premium 62.5% CFR China	Not specified	CFR	Qingdao, China	Third month after current month	Not specified	\$/dmtu

Derivatives

62% Fe fines derivatives are traded as a fixed price (e.g. \$80/mt) or in intermonth spreads. These instruments are financially settled against the average of the daily TSI Iron Ore Fines 62% Fe CFR China (TS01021) assessments for respective periods.

Lump premium derivatives are traded on a \$/dmtu basis as a premium to IODEX or in intermonth spreads, and are financially settled against the average of the daily Platts Spot Lump Premium assessment (IOCLP00).

Platts publishes derivatives assessments for current month (Mo0), month one (Mo01), second month (Mo02) and third month

(Mo03) strips. For fines only Platts also publishes assessments for the next three calendar quarters and next calendar year.

Monthly assessments roll on the first day of the month.

Quarterly derivatives assessments roll four times a year on the first business days of January, April, July and October. A year is defined as a calendar year, for example 2020, i.e. from the first to the last business working day in that year.

For example, during October 2019, the current month is October, the Mo01 is November 2019, Mo02 is December 2019, and Qr01 is Q1 2020. On November 1, the Mo0 becomes November, Mo01 - December, Mo2 rolls to January, Qr01 remains Q1 2010.

FINES NETBACKS

Assessment	Code	Mavg	Type	Published	Page	Quality	Quantity	Incoterms	Location	Timing	Payment	UOM
Australia Capesize	IONBA00	IONBA03	Calculation	Daily	PMA1106	62% Fe		FOB	Port Hedland	NA	NA	\$/dmt
Brazil Capesize	IONBB00	IONBB03	Calculation	Daily	PMA1106	62% Fe		FOB	Tubarao	NA	NA	\$/dmt
NW Europe Capesize	IONBR00	IONBR03	Calculation	Daily	PMA1106	62% Fe		CFR	Rotterdam	NA	NA	\$/dmt
South Africa Capesize	IONSA00	IONSA03	Calculation	Daily	PMA1106	62% Fe		FOB	Saldanha Bay	NA	NA	\$/dmt
West India Panamax	IONBI00	IONBI03	Calculation	Daily	PMA1106	62% Fe		FOB	Mormugao	NA	NA	\$/dmt
West India Supramax	IODFA00	IODFA03	Calculation	Daily	PMA1106	58% Fe		FOB	Mormugao	NA	NA	\$/dmt
Brazil Capesize	IOFBN00	IOFBN03	Calculation	Daily	PMA1106	65% Fe		FOB	Tubarao	NA	NA	\$/dmt

Netbacks

The FOB netbacks are automatically calculated using a formula that deducts the respective dry bulk freight assessments from the day's IODEX 62% Fe, 58% Fe and 65% Fe iron ore assessments CFR Qingdao. Reference ports are Port Hedland, Mormugao, Haldia/Paradip, Tubarao, Rotterdam, Saldanha Bay. The dry bulk freight is converted from \$/wmt into \$/dmt, using moisture content commonly seen in ores of respective origins.

For example, Iron ore 58%-Fe netback West India Supramax price is automatically calculated by deducting the assessed Iron Ore Mormugao, WC India – Qingdao Supramax freight rate for a 50,000 mt cargo from the IO Fines Fe 58% CFR China assessment on the day, after normalizing the assumed moisture level of 11% for iron ore cargoes loading from West Coast India

to a dry metric ton basis.

The CFR NW Europe IODEX netback is calculated by adding the Platts Tubarao to Rotterdam Capesize freight assessment to IODEX Brazil netback.

Moisture levels, used for conversion of freight rates

IODEX 62% Fe

Australia-China Capesize	8.03%
Brazil-China Capesize	9.00%
Brazil-NW Europe Capesize	9.00%
South Africa-China Capesize	3.00%
West India-China Panamax	8.11%
West India-China Supramax	8.11%

58%-Fe

West India-China Supramax 11%

65%-Fe

Brazil-China Capesize 8.5%

Dry Bulk Freight

Platts assesses freight rates for dry bulk cargoes on a variety of routes. Please refer to the Freight specifications guide for details of these assessments https://www.spglobal.com/platts/plattscontent/_assets/_files/en/our-methodology/methodology-specifications/freight-methodology.pdf.

REVISION HISTORY

April 2020: Launched the direct reduction pellet premium (over 65% Fe fines base) and DR pellet outright price (FOB Brazil) assessments, and 65%-Fe fines FOB Brazil netback. Amended the original DR pellet premium over IODEX to exclude any further quality and iron content adjustments.

March 2020: Amended lower silica differential band for medium grade iron ore fines.

February 2020: Updated to reflect lump premium assessment change. Platts launched lump outright price assessment. Clarified IODEX and 58% Fe FOB netbacks.

November 2019: Platts launched six brand differentials to IODEX.

November 2019: Methodology & Specifications Guide Annual Review was conducted and clarifications made, including on the calculation of the floating brand prices, dry bulk freight and description of the concentrate. Restructured the guide in a logical way, removed discontinued and added missing codes, added type of assessment, frequency and fixed page numbers for the real-time alert.

August 2019: Added explanation on the iron ore 58%-Fe FOB netback calculations.

June 2019: Updated to reflect inclusion of Jimblebar fines in Platts 62% IODEX CFR China and the launch of 57% Fe Yandi Brand Assessments. Platts completed an annual update to sections 1 to 6 of Platts Methodology and Specifications Guides in April 2019, and moved these sections into a standalone Methodology Guide.

January 2019: Updated to reflect Iron Ore Phosphorus Differentials and weekly Spot Blast Furnace Iron Ore Pellet 64% CFR China and Spot Blast Furnace Iron Ore Pellet Premium 64%

CFR China assessments. Clarified timing cargo delivery timing calculation.

September 2018: Methodology & Specifications Guide Annual Review was conducted and clarifications made, including sections I-VI. Platts added details around the new iron ore seaborne brand assessments.

May 2018: Updated to reflect change in China's VAT rate and consequent impact on the name of domestic concentrate assessment (SB01159).

January 2018: Updated to reflect TSI-IODEX methodology merger, additional assessment launches. On January 2, 2018, Platts merged the TSI-62% (TS01021) and IODEX-62% (IODBZ00) price series as well as the TSI-58%, 1.5% Alumina (TS01047) and the Platts 58% low-Alumina assessment (IONC580).

December 2017: Updated to reflect launch of Lump Premium swaps assessments.

November 2017: Added section describing use of floating price indications in iron ore assessments.

October 2017: Methodology & Specifications Guide Annual Review was conducted and clarifications made.

August 2017: This methodology guide was updated to reflect the increase in frequency of the lump premium assessment to daily from weekly, and to reflect the launch of the IOPEX port stock assessments.

February 2017: This methodology guide was updated to reflect the launch of a current month swap assessment (AAQTA00), from February 1, 2017.

September 2016: Methodology & Specifications Guide Annual Review was conducted and clarifications made.

July 2016: This methodology guide was updated to reflect the discontinuation of the daily 52%-Fe Iron Ore price assessment (IONC520), from July 1, 2016.

June 2016: This methodology guide was updated to reflect the discontinuation of the daily 63.5/63%-Fe Iron Ore price assessment (IODSC00) from June 1, 2016.

October 2015: This methodology guide was updated to include the new spot 65%-Fe blast furnace blast furnace pellet premium assessment which was launched October 7, 2015. The quarterly lump premium contract price section was also taken out as it is no longer relevant or utilized in the market. The moisture content for the IO Fines 65% Fe CFR China assessment was also updated.

July 2015: This methodology guide was updated to include product specifications for IOBFP00 Atlantic Basin iron ore pellet premium and SB01095 Atlantic Basin Iron Ore Pellets FOB Basis, which was added effective July 1, 2015. The Platts DR pellet premium assessment was added, as well as details on the IODEX netback Rotterdam, both launched July 1, 2015.

May 2015: This methodology guide was updated to include the new phosphorus differential assessment which was launched May 18, 2014.

February 2015: This methodology guide was updated to include further description of Platts' processes and practices in survey assessment environments.

July 2014: Platts revamped all Metals Methodology and Specification guides, including its Iron Ore guide, in July 2014. This revamp was completed to enhance the clarity and usefulness of all guides, and to introduce greater consistency of layout and structure across all published methodology guides. Methodologies for market coverage were not changed through this revamp, unless specifically noted in the methodology guide itself.